

**REMARKS/ARGUMENTS**

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1 and 5-17 are pending in the above application, of which claims 1, 5 and 15 are independent. By the above amendment, claims 11-17 have been added, and claim 6 has been cancelled without prejudice.

The Office Action dated March 16, 2011, has been received and carefully reviewed. In that Office Action, claim 5 was rejected under 35 U.S.C. 102(b) as being anticipated by Inbe, and claims 1 and 7-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski. Claim 6 was not specifically mentioned in any rejection but was discussed in connection with the rejections of claims 7-10, and it is assumed that the examiner intended to reject claim 6 under 35 U.S.C. 103(a) as being unpatentable for the same reasons as claims 7-10. Each of these issues is addressed below, and reconsideration and allowance of claims 1 and 5-17 are respectfully requested in view of the above amendments and the following remarks.

**REQUEST FOR WITHDRAWAL OF PREMATURE FINALITY**

MPEP 706.07(a) provides that "second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims, nor..." The Office Action indicates that new grounds of rejection were necessitated by Applicant's amendments filed February 23, 2010. It is respectfully submitted that if the February 23, 2010, amendments had made necessary new grounds of rejection, those rejections would have been raised in the final Office Action dated June 9, 2010. Instead, that final Office

Action repeated earlier rejections. The new grounds of rejection, therefore, appear to have been made necessary by the pre-appeal brief review that was requested on September 9, 2010, rather than by any amendment made by Applicant. For this reason, it is respectfully submitted that the finality of the March 16, 2011, Office Action is premature and should be withdrawn. Since the present Office Action should have been a non-final Office Action, the entry of the above amendments is respectfully requested.

REJECTIONS UNDER 35 U.S.C. 102(b)

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Inbe. Claim 5, as amended, recites a heat exchanger having a number of heat transfer surfaces made from metal to which a plurality of layers have been applied, nanoparticles being used for the layers. The nanoparticles comprise nanoparticles of organic and/or inorganic compounds of cerium dissolved and/or dispersed in inorganic and/or organic solvents. Inbe does not show or suggest the use of nanoparticles of cerium as now claimed, and claim 5 as amended is therefore submitted to be allowable over Inbe.

REJECTIONS UNDER 35 U.S.C. 103(a)

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski. By the above amendment, the limitations of claim 6 have been added to claim 1, giving claim 1 the same scope as the previous version of claim 6. The Office Action acknowledged that the layer thicknesses recited in former claim 6 were not shown by the art of record, but asserted that the specific layer thicknesses

were considered to be “an obvious design expedient,” producing no new or unexpected results and solving no stated problem. It is respectfully submitted that the reason for using layers having the claimed thicknesses are disclosed in the specification. Moreover, layers having these thicknesses provide adequate corrosion resistance and hydrophilicity in a manner not suggested by the prior art. Finally, nothing in the record suggests the desirability of using first and second layers having these thicknesses. Each of these issues is addressed below.

Page 7, lines 5-13, of the present specification indicates that it is desirable to use layers having the thicknesses recited in claim 1 to reduce volume and weight. The reduction in volume of the layers may help maintain adequate spacing between adjacent portions of a heat exchanger to allow for a desired level of fluid flow. Layers of the claimed thicknesses thus solve problems of excessive volume and weight in a heat exchanger coating.

The Office Action calls the use of a layer having a certain thickness an “obvious design expedient.” This phrase appears in the MPEP in section 2144.04 which deals with the use of legal precedent to support rejections. That section further provides that “if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court.” That is, if something has already been held to be an obvious design expedient by a court, an examiner may sometimes, using a similar rationale, find similar changes to similar structures to be obvious design expedients.

Without a supporting court decision, it is respectfully submitted that “obvious design expedient” is not an independent basis for establishing obviousness. No such

prior legal decision is cited in the Office Action. Two case from MPEP 2144.04 that might be relevant to this rejection relate to changes in size and proportion. However, the first of those two cases, *In re Rose*, 220 F.2d 459, (CCPA 1955), is directed to modifying the size of a package of lumber. The facts of that case have nothing to do with modifying the thickness of an anticorrosive layer of material on a heat exchanger and do not support this rejection. The second case, *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, (Fed. Cir. 1984), involved the size and shape of air nozzles used for supporting a web of material. Changing the size of such air nozzles may constitute an obvious design expedient, but these facts provide no support for the assertion that an anticorrosive layer should be made considerably thinner than what is disclosed in the prior art.

To the extent that the rejection of claim 1 is based on the "obvious design expedient" statement in the Office Action it is respectfully traversed. If the examiner continues to rely on the "obvious design expedient" statement to support this rejection, it is respectfully requested that the examiner cite the legal authority that allows rejections to be based on obvious design expedient without citing a prior legal decision that established that obvious design expedient.

The references of record do not show a heat exchanger having an anticorrosive layer less than or equal to 1  $\mu\text{m}$  as claimed. The portion of Troczynski cited in the Office Action discusses the use of a 50  $\mu\text{m}$  thick layer of anticorrosive material. It therefore must be shown that a person of ordinary skill in the art would have found it obvious to reduce the thickness of this layer by at least 98% to less than or equal to 1  $\mu\text{m}$  and still expect the layer to have adequate anti-corrosive properties. That person of ordinary

skill in the art must also have had a reason to reduce Troczynski's anticorrosive layer in this manner to satisfy the requirements of *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). Without such a showing, it is respectfully submitted that a prima facie case of obviousness has not been presented in connection with former claim 6 / currently amended claim 1, and claim 1 is submitted to be allowable for this reason.

Claims 7-10 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

#### NEW CLAIMS

Claims 11-13 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

New claim 14 recites a heat exchanger comprising a plurality of heat transfer surfaces made from aluminum or aluminum compounds, a first coating layer on the plurality of heat transfer surfaces having a thickness of less than or equal to 1.5  $\mu\text{m}$ , and a second coating layer on the first coating layer having a thickness less than or equal to 1.5  $\mu\text{m}$ . The first coating layer comprises nanoparticles of a first composition adapted to provide corrosion resistance to the aluminum or aluminum compounds, and the second coating layer comprises nanoparticles of a second composition different than said first composition and having hydrophilic properties and a wetting contact angle with water of less than or equal to 40°. Layers having the above-recited thicknesses are not shown or suggested by the art of record for at least the reasons provided above in connection with claim 1, and claim 14 is submitted to be allowable for at least the same reasons as claim 1.

Claims 15-17 depend from claim 14 and are submitted to be allowable for at least the same reasons as claim 14.


### **CONCLUSION**

Each issue raised in the Office Action dated March 16, 2011, has been addressed, and it is believed that claims 1 and 5-17 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.

#### *Deposit Account Authorization*

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,



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**Date: May 20, 2011**